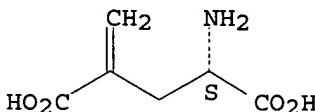


=> s 4-methylene-l-glutamic acid/cn
L1 1 4-METHYLENE-L-GLUTAMIC ACID/CN

=> d

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN 16804-57-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-Glutamic acid, 4-methylene- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Glutamic acid, 4-methylene-, L- (8CI)
OTHER NAMES:
CN γ -Methylene-L-glutamic acid
CN γ -Methyleneglutamic acid
CN 4-Methylene-L-glutamic acid
CN 4-Methyleneglutamic acid
CN L- γ -Methyleneglutamate
CN L-4-Methyleneglutamic acid
FS STEREOSEARCH
MF C6 H9 N O4
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAPLUS,
CASREACT, CHEMINFORMRX, EMBASE, IPA, NAPRALERT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

78 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
78 REFERENCES IN FILE CAPLUS (1907 TO DATE)

	SINCE FILE ENTRY	TOTAL SESSION
COST IN U.S. DOLLARS		
FULL ESTIMATED COST	6.87	7.53

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FILE LAST UPDATED: 17 Aug 2005 (20050817/ED)

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substance identification.

=> s 16804-57-2/prep
78 16804-57-2
3344682 PREP/RL
L2 10 16804-57-2/PREP
(16804-57-2 (L) PREP/RL)

=> s 16804-57-2/proc
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3732873 PROC/RL
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=> s 16804-57-2/pur
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=> s l2 or l3
L5 15 L2 OR L3

=> s l5 and pyrogluta?
4244 PYROGLUTA?
L6 3 L5 AND PYROGLUTA?

=> d 1-3 ibib abs hitstr

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:392435 CAPLUS
DOCUMENT NUMBER: 140:375488
TITLE: Process for synthesizing L-methyleneglutamic acid and
analogs
INVENTOR(S): Kochat, Harry; Chen, Xinghai; Wu, Ye; Huang, Qiuli;
Wang, Jianyan; Gerusz, Vincent
PATENT ASSIGNEE(S): Bionumerik Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 13 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004039314	A2	20040513	WO 2003-US33236	20031022
WO 2004039314	A3	20041209		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR			
US 2004106826	A1	20040603	US 2003-627484	20030725
CA 2503029	AA	20040513	CA 2003-2503029	20031022
EP 1554235	A2	20050720	EP 2003-781352	20031022
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
PRIORITY APPLN. INFO.:			US 2002-421489P	P 20021025
			US 2003-627484	A 20030725
			WO 2003-US33236	W 20031022

OTHER SOURCE(S): CASREACT 140:375488

AB A process for synthesizing 4-methylene-L-glutamic acid and analogs
comprises converting (2S)-pyroglutamic acid or a derivative to a
4-enamine derivative, hydrolysis to a 4-hydroxymethylene derivative, reduction to a
4-methylene derivative, and treatment with strong base to effect ring

cleavage. In the examples, L-pyroglutamic acid was C/N-protected and reacted with DMF diisopropyl acetal to form intermediate Et 4-[(dimethylamino)methylene]-N-(tert-butoxycarbonyl)-L-pyroglumate, which was converted into 4-methylene-L-glutamic acid hydrochloride.

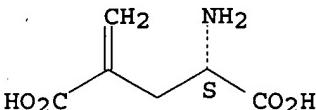
IT 16804-57-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(process for synthesizing L-methyleneglutamic acid and analogs)

RN 16804-57-2 CAPLUS

CN L-Glutamic acid, 4-methylene- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:631298 CAPLUS

DOCUMENT NUMBER: 121:231298

TITLE: Efficient synthesis of 4-methylene-L-glutamic acid and its cyclopropyl analog

AUTHOR(S): Ezquerro, Jesus; Pedregal, Concepcion; Mico, Irene; Najera, Carmen

CORPORATE SOURCE: Cent. Invest. Lilly S. A., Valdeolmos, 28130, Spain

SOURCE: Tetrahedron: Asymmetry (1994), 5(5), 921-6

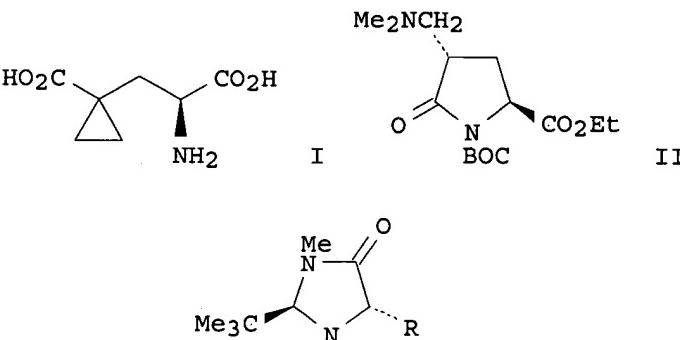
CODEN: TASYE3; ISSN: 0957-4166

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 121:231298

GI



AB Title compds. L-NHCH(CO₂H)CH₂C(CO₂H):CH₂ and cyclopropyl analog I were obtained from protected **pyroglutamate** Boc-pGlu-OEt (Boc = Me₃CO₂C) in 2 and 3 steps, resp. Key methylenepyroglutamate intermediate II was prepared by reaction of the protected **pyroglutamate** lithium lactam enolate with Eschenmoser's salt. Cyclopropyl derivative I was also prepared from imidazolidone III (R = H) in 3 steps. The intermediate III [R = CH₂C(CO₂Bu):CH₂] was obtained by diastereoselective reaction of the lithium enolate of III (R = H) with Bu (2-tosylmethyl)acrylate.

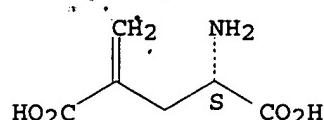
IT 16804-57-2P, 4-Methylene-L-glutamic acid

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, from **pyroglutamic acid**)

RN 16804-57-2 CAPLUS

CN L-Glutamic acid, 4-methylene- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:671664 CAPLUS

DOCUMENT NUMBER: 119:271664

TITLE: Synthesis of naturally occurring 4-alkylidene glutamic acids

AUTHOR(S): Moody, Claire M.; Young, Douglas W.

CORPORATE SOURCE: Sch. Chem. Mol. Sci., Univ. Sussex, Falmer/Brighton, BN1 9QJ, UK

SOURCE: Tetrahedron Letters (1993), 34(29), 4667-70

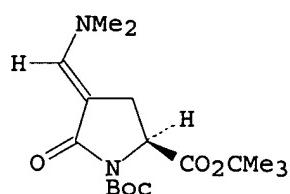
DOCUMENT TYPE: CODEN: TELEAY; ISSN: 0040-4039

Journal

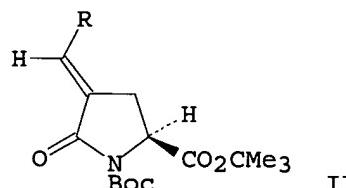
LANGUAGE: English

OTHER SOURCE(S): CASREACT 119:271664

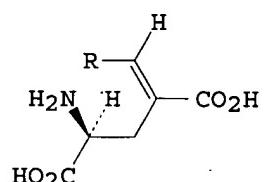
GI



I



II



III

AB Enaminone I (Boc = Me₃CO₂C) reacted with Grignard reagents RMgBr (R = Me, Et, Ph, C.tplbond.CH) to afford (E)-alkylidene derivs. II. II (R = H, Me, Et) were converted to 4-alkylidene glutamic acids III (R = H, Me, Et).

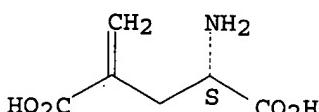
IT 16804-57-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 16804-57-2 CAPLUS

CN L-Glutamic acid, 4-methylene- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



=>

s pyroglutamic acid/cn

L7 . . . 1 PYROGLUTAMIC ACID/CN

=> d

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 98-79-3 REGISTRY

ED Entered STN: 16 Nov 1984

CN L-Proline, 5-oxo- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Proline, 5-oxo-, L- (8CI)

OTHER NAMES:

CN (-)-2-Pyrrolidone-5-carboxylic acid

CN (-)-Pyroglutamic acid

CN (2S)-5-Oxopyrrolidine-2-carboxylic acid

CN (5S)-2-Oxopyrrolidine-5-carboxylic acid

CN (S)-(-)- γ -Butyrolactam- γ -carboxylic acid

CN (S)-(-)-2-Pyrrolidone-5-carboxylic acid

CN (S)-2-Pyrrolidone-5-carboxylic acid

CN (S)-5-Oxo-2-pyrrolidinecarboxylic acid

CN (S)-Pyroglutamic acid

CN 2-L-Pyrrolidone-5-carboxylic acid

CN 2-Oxopyrrolidine-5(S)-carboxylic acid

CN 2-Pyrrolidinone-5-carboxylic acid

CN 5-Carboxy-2-pyrrolidinone

CN 5-Oxo-L-proline

CN 5-Oxoproline

CN 5-Pyrrolidinone-2-carboxylic acid

CN Ajidew A 100

CN Glutimic acid

CN Glutiminic acid

CN L-2-Pyrrolidone-5-carboxylic acid

CN L-5-Carboxy-2-pyrrolidinone

CN L-5-Oxo-2-pyrrolidinecarboxylic acid

CN L-5-Oxoproline

CN L-Glutamic acid, γ -lactam

CN L-Glutimic acid

CN L-Glutiminic acid

CN L-Pyroglutamic acid

CN L-Pyrrolidinonecarboxylic acid

CN L-Pyrrolidonecarboxylic acid

CN NSC 143034

CN Oxoproline

CN Oxopyrrolidinecarboxylic acid

CN PCA

CN Pidolic acid

CN Pidolidone

CN Pyroglutamic acid

CN Pyrrolidinonecarboxylic acid

CN Pyrrolidone-5-carboxylic acid

CN Pyrrolidonecarboxylic acid

AR 35255-51-7

FS STEREOSEARCH

DR 6886-28-8, 498-91-9, 16891-48-8, 87430-62-4, 29222-42-2, 312618-42-1

MF C5 H7 N O3

CI COM

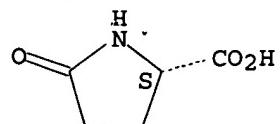
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSChem, CSNB, DDFU, DRUGU, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USAN, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (-).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2694 REFERENCES IN FILE CA (1907 TO DATE)
178 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2700 REFERENCES IN FILE CAPLUS (1907 TO DATE)
20 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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